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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,381	03/13/2001	Sin-Gu Kang	06192.0194.NPUS00	1173

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EXAMINER

ZAMANI, ALI A

ART UNIT	PAPER NUMBER
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2674

6

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/804,381

Applicant(s)

KANG, SIN-GU

Examiner

Ali A. Zamani

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US pat. No. 6, 590, 624 B1) in view of Kuwashiro. (US Pat. No. 5,945,948).

In regard to claim 1, Lee disclose a driving module for applying a driving signal to a display cell circuit having a plurality of transmission lines and formed on a transparent substrate through the plurality of signal transmission lines, comprising: a flexible board (Fig. 3); a driving circuit mounted on the flexible board (see Figs. 4A-4D); and an inspection (Fig. 1) formed on the plurality of driving signal lines for inspecting states of the plurality of driving signal lines and the driving signal; a plurality of driving signal input/output lines that are electrically communicated with the driving circuit and the display cell circuit (col. 6, lines 11-20).

Lee does not teach or suggest an “inspecting formed on the plurality of driving signal input/output lines for inspecting states of the plurality of driving signal input/output lines and the driving signal”. However, Kuwashiro teaches a display device and method of inspection comprising a display panel having a plurality of pixel elements and plurality of driver circuit elements for receiving a serially input signal, converting signal to display panel, and a printed-wiring board which have a plurality of signal output terminal (see Figs 3 and 4). Kuwashiro

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substantially teach the concept of inspecting means formed on the plurality of driving signal input/output lines for inspecting states of the plurality of driving signal input/output is old (Figs 1-3, cols 2 and 3, lines 47-67 and lines 1-14 respectively).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the method of the inspecting device of Kuwashiro in the display of Lee to provide LCD panels which do not require physical disconnection of elements in the gate line area or data line area after gross testing.

As to claim 2, Kuwashiro teaches that the plurality of driving signal input/output lines are formed at a side of the substrate (col.2, lines 12-25).

As to claim 3, Kuwashiro teaches that the driving circuit is a gate driving circuit, and the driving signal is a gate driving signal (see Figs 1-3).

In regard to claims 4-8, Lee teaches a plurality of gate driving signal bypass lines which are formed on the flexible board for providing the gate driving signal supplied from the gate driving circuit to a next circuit and each of the plurality of gate driving signal input lines is connected to each of the plurality of gate driving signal bypass lines in the gate driving circuit (see Figs 4A-4D, col. 8, lines 8-51).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9-19 are rejected under 35 U.S.C. 102(e) as being anticipate by Nagata et al. (US Pat. No. 6,624,857).

In regard to claim 9, Nagata et al. discloses a liquid crystal display device, comprising: a liquid crystal display panel having a plurality of first and second signal transmission lines and display cell circuits that are connected to pairs of first and second signal transmission lines (see Fig. 4), the liquid crystal display panel displaying an image in response to first and second driving signals inputted through the first and second transmission lines; an integrated printed circuit board for generating the first and second driving signals; a plurality of first driving modules that are electrically connected between the integrated printed circuit board and the plurality of first signal transmission lines so as to transmit the first driving signal to the first signal transmission lines after controlling a time for applying the first driving signal from the integrated printed circuit board; and a plurality of second driving modules having a plurality of driving signal input/output lines connected to the plurality of second signal transmission lines, the second driving modules transmitting the second driving signal to the second signal transmission lines after controlling the time for applying the second driving signal from the integrated printed circuit board, the second driving modules inspecting state of the second driving signal and the plurality of driving signal input/output lines (Figs 7 and 16, col. 5, lines 55-65).

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As to claim 10, Nagata teaches that the liquid crystal display device, wherein the plurality of driving signal input/output lines are formed at a side of the liquid crystal display panel (see Figs 4 and 7).

As to claim 11, Nagata discloses a liquid crystal display device, wherein the first signal transmission lines are data signal transmission lines, the second signal transmission lines are gate signal transmission lines, the first and second driving signals are data and gate driving signals, respectively, and the first and second driving modules are data and gate driving modules, respectively (see Fig. 7).

As to claim 12, Nagata discloses a liquid crystal display device, wherein the gate driving module comprises: a flexible board; a gate driving circuit mounted on the flexible board; a plurality of driving signal input/output lines that are electrically communicated with the gate driving circuit and the display cell circuit so as to input/output the gate driving signal; and an inspecting means formed on the plurality of driving signal input/output lines for inspecting state of the plurality of driving signal input/output lines and the driving signal (Fig. 7, col. 7, lines 7-13).

As to claim 13, Nagata discloses a liquid crystal display device, wherein the plurality of driving signal input/output lines comprises: a plurality of gate driving signal input lines that are formed on the flexible board for providing the gate driving signal to the gate driving circuit; a plurality of gate driving signal bypass lines that are formed on the flexible board for providing the gate driving signal supplied from the gate driving circuit to a next circuit; and a gate driving signal output line which is connected between the gate driving circuit and the second signal

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transmission lines so as to provide the gate driving signal supplied from the plurality of gate driving signal input lines to the signal transmission lines (see Figs 4 and 7).

As to claim 14, Nagata discloses a liquid crystal display device, wherein each of the plurality of gate driving signal input lines is correspondingly connected to each of the plurality of gate driving signal bypass lines (21B, 21G and 21R) in the gate driving circuit (20b) (Fig. 7).

As to claim 15, Nagata discloses a liquid crystal display device, wherein the inspecting means is formed at only one group of the plurality of gate driving signal input lines and the plurality of gate driving signal bypass lines (Figs 7 and 18).

As to claim 16, Nagata discloses a liquid crystal display device, wherein the inspecting means is separately formed at the plurality of gate driving signal input lines and the plurality of gate driving signal bypass lines, and in a line in which a gate driving signal input line is electrically communicated with a gate driving signal bypass line, the inspecting means is formed at only one of the gate driving signal input line and the gate driving signal bypass line (see Fig. 7).

As to claim 17, Nagata discloses a liquid crystal display device, wherein the inspecting means is formed by point-shaped patterns having an area larger than an area of each gate driving signal input line and gate driving signal bypass line (Fig. 18).

As to claim 18, Nagata discloses a liquid crystal display device, further comprising a first means for transmitting the gate driving signal from the integrated printed circuit board to a foremost gate driving module among the plurality of gate driving module, the first means being formed on the liquid crystal display panel (col. 16, lines 28-63).

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As to claim 19, Nagata discloses a liquid crystal display device, further comprising a second means for transmitting the gate driving signal from the integrated printed circuit board to an adjacent gate driving module among the gate driving modules, the second means being formed on the liquid crystal display panel (Figs 30 and 31).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Zamani whose telephone number is (703) 308-6414. The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe, can be reached on (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC 20231

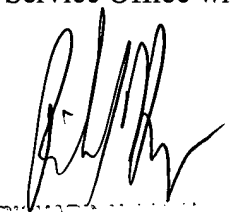
or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ali Zamani

January 7, 2004


STAMPED: 01/07/2004
TECHNOLOGY CENTER 2600
CUSTOMER SERVICE OFFICE